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Successful Water Flooding Management in Complicated Structure and Heterogeneous Multilayer Nezzazat Reservoir through Production Data Advanced Classical Approach in Gulf of Suez, Egypt

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Water flooding modeling of complicated structurally and heterogeneous multilayer Gulf of Suez Nezzazat field is particularly challenging when dealing with multiple cross faults and facies changes across field. In such cases, the modeling approaches usually tend to incorrectly reproduce or to simplify the actual geological situation. The scope of this contribution is to describe classical approach which used as a front–end to reservoir simulation to simplify the geological model and maximize the recovery from such field before embarking on expensive EOR Solution.

One of the key elements to success of water floods in structurally heterogeneous multilayer is well and reservoir management. This paper illustrate the use of daily production data to set up system indicate the health of water flood use advanced classical approach so that they are readily available on demand to know the basis for any hierarchy of production system; Field pattern, groups, individual pattern, pressure modelling etc. The observations and results can then be applied to take proactive measures for preventive management.

To manage water flood in dynamic scenario, reservoir engineers need to watch them closely, analysis them for anomalous trend in a continuous fashion and be able to apply remedial measure as they manifest themselves. This cannot be done through numerical simulation model due to reservoir complexity. This paper is an effort to put many such methodologies in structured format which will enable the engineer to monitor the floods in a systematic and step wise manner to improve the flood efficiency and maximize the recovery from complex field. An added benefit is that these geologic models can then be used as a front-end to comprehensive reservoir simulation Utilized to drill well to support 4000 BOPD incremental gain. Case study illustrates the best surveillance practices are discussed.

Biography

Islam Fawaz had worked as a Senior Reservoir Engineer for Gulf of Suez Petroleum Company in Egypt. He has 7 years experience in reservoir engineering and his major studies are reservoir management and numerical model.